

ABSTRACT

A CPP spin-valve element formed on a substrate including a free layer structure including at least one ferromagnetic layer and a pinned layer structure including at least one ferromagnetic layer. The free layer is magnetically softer than the pinned layer. A thin
5 non-magnetic spacer layer structure configured to separate the free layer and the pinned layer is provided in order to prevent a magnetic coupling between the free and pinned layer structures, and to allow an electric current to go there through. At least two current-confining (CC) layer structures including at least two parts having significantly different current conductivities are incorporated therein.